

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.



1.96
R31Sn
cop. 2

U. S. DEPT. OF AGRICULTURE
NATIONAL AGRICULTURAL LIBRARY

APR 14 1970

CURRENT SERIAL RECORDS

WATER SUPPLY OUTLOOK FOR ARIZONA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE,
SALT RIVER VALLEY WATER USERS ASSOCIATION
and
ARIZONA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with the Federal, State and private organizations listed on the last page of this report.

AS OF
MAR. 15, 1970

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant overage effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The overage of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1400 snow courses in Western United States and in the Columbia Basin in British Columbia. In the near future, it is anticipated that automatic snow water equivalent sensing devices along with radio telemetry will provide a continuous record of snow water equivalent at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 701 N. W. Glisan, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	P. O. Box "F", Palmer, Alaska 99645
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	12417 Federal Building, Denver, Colorado 80202
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Building, Salt Lake City, Utah 84111
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 340, Casper, Wyoming 82601

PUBLISHED BY OTHER AGENCIES.

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR ARIZONA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

KENNETH E. GRANT
ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.

////////////////////////////////////
Released by

M. D. BURDICK
STATE CONSERVATIONIST
SOIL CONSERVATION SERVICE
PHOENIX, ARIZONA

In Cooperation with

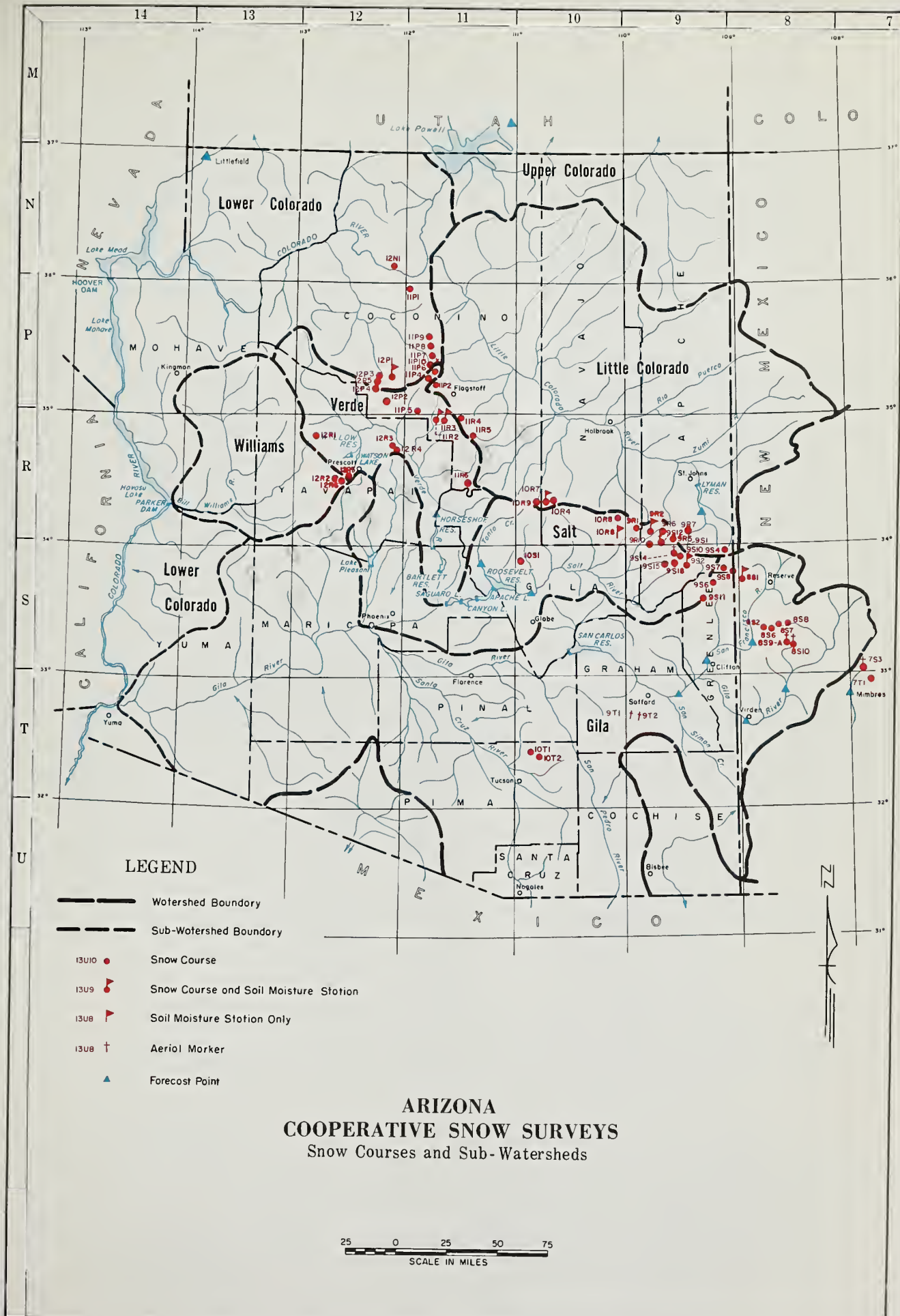
RICHARD K. FREVERT
DIRECTOR
ARIZONA AGRICULTURAL
EXPERIMENT STATION

VICTOR I. CORBELL
PRESIDENT
SALT RIVER VALLEY WATER
USERS ASSOCIATION

////////////////////////////////////
Report prepared by

RICHARD W. ENZ, Snow Survey Supervisor

SOIL CONSERVATION SERVICE
ROOM 6029 FEDERAL BUILDING
PHOENIX, ARIZONA 85025



INDEX to SNOW COURSES and SOIL MOISTURE STATIONS

Number	Name	Sec.	Twp.	Rge.	Elev.	River Basin
11P10-A	Agassiz	32	23N	7E	11200	Little Colorado
11R6	Baker Butte (p)	4	12N	9E	7300	Verde
9S1-A	Boldy (p)	28	7N	27E	9125	Little Colorado
9S15	Boldy #2	12	6N	26E	10000	Little Colorado
9S16	Boldy #3	13	6N	26E	11000	Little Colorado
10T1	Beor Wallow	6	12S	16E	8100	Gilo
9S6	Beover Head	13	4N	30E	8000	San Francisco
12P5	Bill Williams Intermediote	17	21N	2E	8550	Lower Colorado
12P4	Bill Williams Summit	17	21N	2E	8950	Lower Colorado
9S10-A	Block River Divide	10	6N	27E	9400	Salt
12N1	Bright Angel	34	33N	3E	8400	Lower Colorado
12R1	Comp Wood	3	16N	6W	5700	Verde
10R7-M	Canyon Creek #2	18	11N	15E	7500	Little Colorado
10R9	Canyon Point (p)	28	11N	14E	7600	Salt
11R2-M	Cosner Pork	19	18N	8E	6930	Verde
12P1-M	Chalender	27	22N	3E	7100	Verde
9R7	Cheese Springs	28	8N	27E	8600	Little Colorado
12R6	Copper Basin Divide (p)	23	13N	3W	6720	Verde
10R8-A	Corduroy Creek	4	8N	21E	6000	Salt
9S7	Coranado Trail	26	5N	30E	8000	San Francisco
9T2-A	Crazy Horse	34	8S	24E	10200	Gilo
7T1	Emory Pass #1	16	16S	9W**	7800	Mimbres
7T2	Emory Pass #2	16	16S	9W**	7800	Mimbres
10R6	Forest Dale	2	9N	21E	6430	Salt
9R5	Ft. Apache	18	7N	27E	9160	Little Colorado
11P2	Ft. Volley (p)	22	22N	6E	7350	Little Colorado
8S1-M	Frisco Divide	31	6S	20W**	8000	San Francisco
12R4	Goddes Canyon	11	15N	2E	7600	Verde
11P1	Grand Canyon	21	30N	4E	7500	Lower Colorado
9S11	Hannagon Meadows (p)	19	3N	29E	9090	Salt
11R5	Hoppy Jock	30	17N	9E	7630	Verde
9R10	Howley Lake	13	7N	24E	8300	Salt
10R4	Heber (p)	28	11N	15E	7600	Little Colorado
9T1-A	High Peak	34	8S	24E	10500	Gilo
8S9-A	Hummingbird	19	11S	17W**	10550	San Francisco
8S6	Ice King	6	11S	18W**	8020	San Francisco
11P9	Inner Basin #1 (p)	28	23N	7E	10000	Little Colorado
11P8	Inner Basin #2 (p)	28	23N	7E	9750	Little Colorado
11P7	Inner Basin #3	3	23N	7E	10250	Little Colorado
12R2	Iran Springs	22	14N	3W	6200	Bill Williams
9S2-A	Maverick Fork (p)	13	6N	27E	9150	Salt
7S3-A	McKnight Cobin	10	15S	10W**	9300	Mimbres
9R2-M	McNary	23	8N	23E	7200	Salt
9R1	Milk Ranch	33	8N	23E	7000	Salt
12R3	Mingus Mountain	3	15N	2E	7100	Verde
8S2	Mogollon	2	11S	19W**	7000	San Francisco
11R4	Mormon Lake	13	18N	8E	7350	Little Colorado
11R3-M-A	Mormon Mountain (p)	14	18N	8E	7500	Verde
9S12-A	Mt. Ord	4	6N	26E	11000	Salt
11P5-M	Newmon Pork	25	19N	6E	6750	Verde
9S4	Nutrisa	23	6N	30E	8500	San Francisco
8S7	Redstone Trail	5	11S	18W**	8600	San Francisco
10T2	Rase Canyon	15	12S	16E	7300	Gilo
8S8	Silver Creek Divide	4	11S	18W**	9000	San Francisco
9S14-A	Smith Cienego	10	6N	26E	9850	Salt
11P4	Snow Bowl #1 (p)	36	23N	6E	10260	Verde
11P6	Snow Bowl #2	31	23N	7E	11000	Verde
9S8	State Line	6	6S	21W**	8000	San Francisco
12P2	White Horse Lake Jct.	2	20N	2E	7150	Verde
12R5	White Spar	19	13N	2W	6000	Verde
8S10-A	Whitewater	19	11S	17W**	10750	Gila
12P3	Williams Ski Run	9	21N	2E	7720	Lower Colorado
9R6	Wilson Lake (p)	4	7N	26E	9000	Salt
10S1	Workman Creek	33	6N	14E	6900	Salt

M SOIL MOISTURE STA.

(p) STORAGE GAGE

A

AERIAL SNOW DEPTH MARKER

** SOIL MOISTURE STA. ONLY

** NM PRINCIPAL MERIDIAN

ARIZONA WATER SUPPLY OUTLOOK

MARCH 15, 1970

* * * * *
* The Water Supply Outlook has improved substantially due to the *
* extremely heavy storms received during the last two weeks. With *
* reservoir storage much above average, good water supplies are in *
* prospect for all areas served by storage facilities, even though *
* streamflow forecasts range from 45-75% of average. *
* * * * *

SNOW COVER

Snow cover on all watersheds increased greatly since the last survey. The Verde Watershed, which had virtually no snow, now has 65% above the average amount for this date. During the first storm of the month temperatures were warm, so part of the precipitation occurred as rain or snow that melted quickly. At the higher elevations, however, there is 2-3' of new snow containing 4-6" of water. Snow cover increased to 67% of average on the Salt and 77% on the Little Colorado Watersheds. The Gila Watershed picked up slightly at the lower elevations, but substantially at the higher elevations in the Mogollon Mountains and in the Hannagan Meadows area. Deepest snow reported was 84" containing 21" of water at Whitewater snow course in the Gila Wilderness.

PRECIPITATION

The two March storms were particularly heavy on the Verde Watershed, resulting in 5-6 inch precipitation amounts at many watershed stations. This is 4-6 times their average for the first half of the month. The Mogollon Rim received similar amounts, but the White Mountains and Gila Watershed generally received 3.5" or less. Some significant precipitation amounts not tabulated elsewhere in this report are: Prescott, 3.52; Flagstaff, 4.69; Payson, 3.96; Tonto Fish Hatchery, 5.85; McNary, 3.30; and Crown King, 7.72. Accumulated winter precipitation has increased 50-100% in the last two weeks, so the season is now only 10-30% below average.

SOIL MOISTURE

With the recent storms, soils are very wet, especially on the surface. Precipitation, accompanied by warm temperatures in the next few weeks, will result in a high yield percentage.

RESERVOIR STORAGE

An increase of 45,000 a.f. into the Salt River Project System occurred since March 1. Total storage there is now 127% of average and 68% of capacity. Lake Pleasant increased 4,500 a.f. to 80% above average. San Carlos showed only a slight gain, but is nevertheless 63% above average.

STREAMFLOW AND WATER SUPPLY

All streamflow forecasts have been raised, with the greatest increase occurring on the Verde River. The combined flow of the Salt, Verde and Tonto is predicted to be 180,000 a.f., or 54% of average. The Gila River runoff is also forecast to be about half of average. Water supplies will be adequate on all projects served by stored water, since reservoir storage is well above average. Considerable pumping will be required on the San Carlos Project and along the Upper Gila River

STREAMFLOW FORECASTS ABOUT MARCH 15, 1970

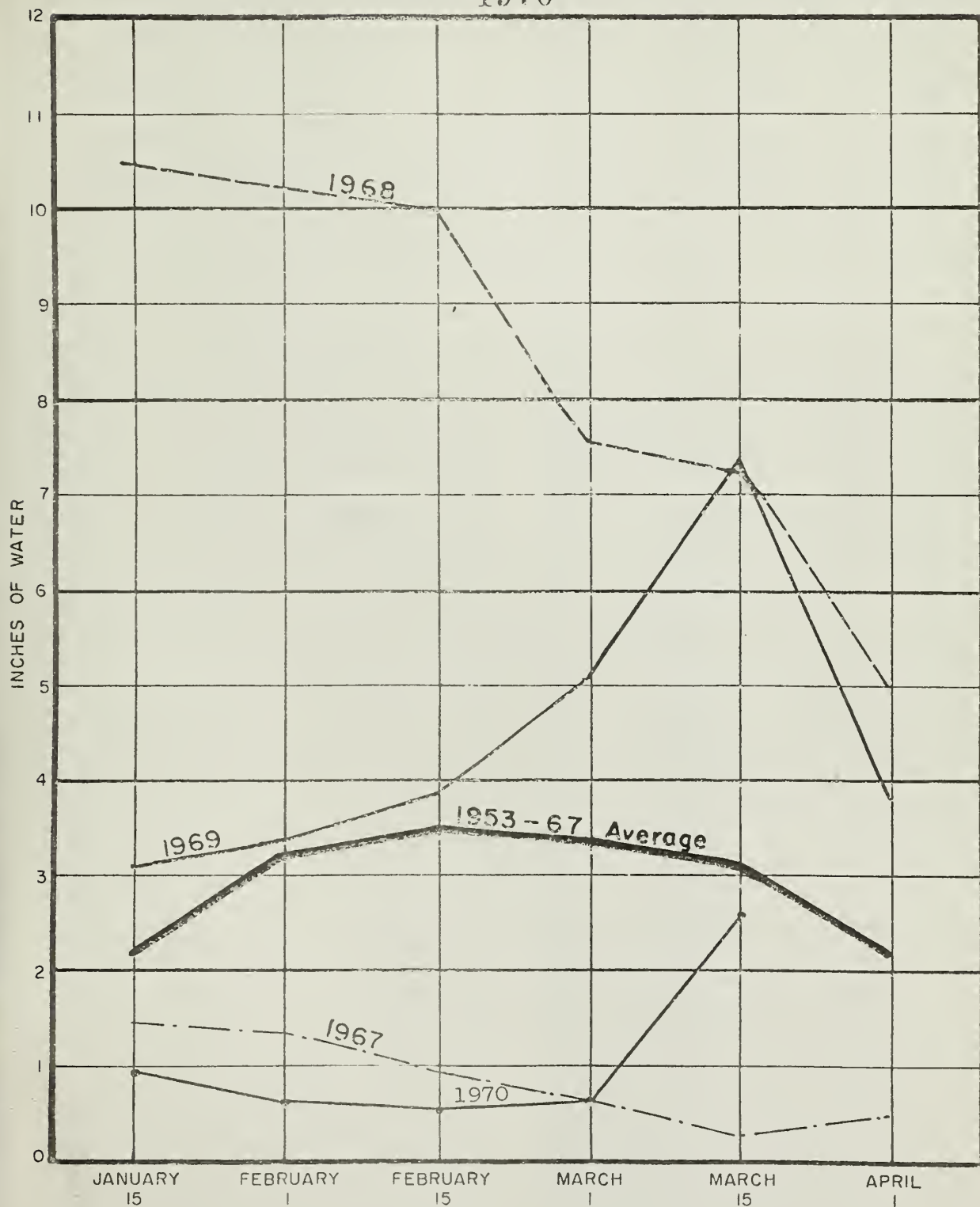
STREAMFLOW FORECASTS		ABOUT MARCH 15, 1970		THIS YEAR		PAST RECORD	
BASIN STREAM and/or FORECAST POINT		FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET		
		Thousand Acre Feet	Percent of Average		Last Year	Average †	
<u>SALT RIVER DRAINAGE</u>							
Salt near Roosevelt		90.	45	Mar-May	275.8	202.3	
Tonto Creek near Roosevelt		10.	44	Mar-May	27.0	22.5	
Verde River above Horseshoe		80.	75	Mar-May	171.6	106.5	
<u>GILA RIVER DRAINAGE</u>							
Gila River near Gila		21.	65	Mar-May	18.2	32.3	
Gila River near Solomon		36.	49	Mar-May	32.4	73.0	
Gila River near Solomon		18.	47	March	10.9	38.4	
Gila River near Virden		19.	52	Mar-May	18.7	36.3	
Frisco River at Clifton		18.	46	Mar-May	20.0	38.7	
Frisco River at Glenwood		7.5	47	Mar-May	6.5	16.0	
<u>MIMBRES RIVER DRAINAGE</u>							
Mimbres River near Mimbres		1.5	63	Mar-May	.5	2.4	
<u>COLORADO RIVER DRAINAGE</u>							
Little Colorado River above Lyman Dam		2.0	26	Mar-June	7.8	7.8	
Colorado River -- Lake Powell Inflow *		6005	92	Apr-July	8162.0	6527.0	
<u>VIRGIN RIVER DRAINAGE</u>							
Virgin River nr. Littlefield		18.	54	Apr-June	182.9	33.4	
<u>GRANITE CREEK DRAINAGE</u>							
Granite Creek		2.1	---	March-May	-----	-----	
Willow Creek		.7	---	Mar-May	-----	-----	
The Gila River is forecast to drop to 100 cfs on April 25.							
* Forecast issued by Soil Conservation Service, Salt Lake City, Utah.							
† Average for 15-year period, 1953-67							
- 2 -							

RESERVOIR STORAGE (Thousand Acre Feet) MID-MONTH READING

ABOUT MARCH 15, 1970

Basin or Stream	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average†
<u>GILA RIVER DRAINAGE</u>					
Agua Fria	Lake Pleasant	157.6	76.7	112.3	42.7
Granite	Watson Lake	4.7	3.2	4.7	---
Granite	Willow Creek	6.1	2.4	2.2	---
Gila	San Carlos	984.9	181.2	464.4	111.4
Verde (2)	Bartlett & Horseshoe	317.7	133.1	231.4	123.3
Salt (4)	Roosevelt, Apache, Canyon & Saguaro	1755.0	1273.6	1539.8	986.7
<u>COLORADO RIVER DRAINAGE</u>					
Colorado	Lake Havasu	619.4	543.2	557.3	537.6
Colorado	Lake Mohave	1810.0	1716.0	1707.0	1708.5
Colorado	Lake Mead	26159.0	16731.0	15333.0	16268.3
Colorado	Lake Powell	25002.0	9553.0	9402.0	---
Little Colorado	Lyman	30.6	20.4	19.2	9.7
Little Colorado	Show Low Lake	5.1	0.2	.5	1.7*
* Average is for less than 15 years of record in the 1953-67 period.					
† Average is for 15-year period, 1953-67.					
- 3 -					

RELATIVE SNOW WATER ACCUMULATION ARIZONA 1970



- 4 -

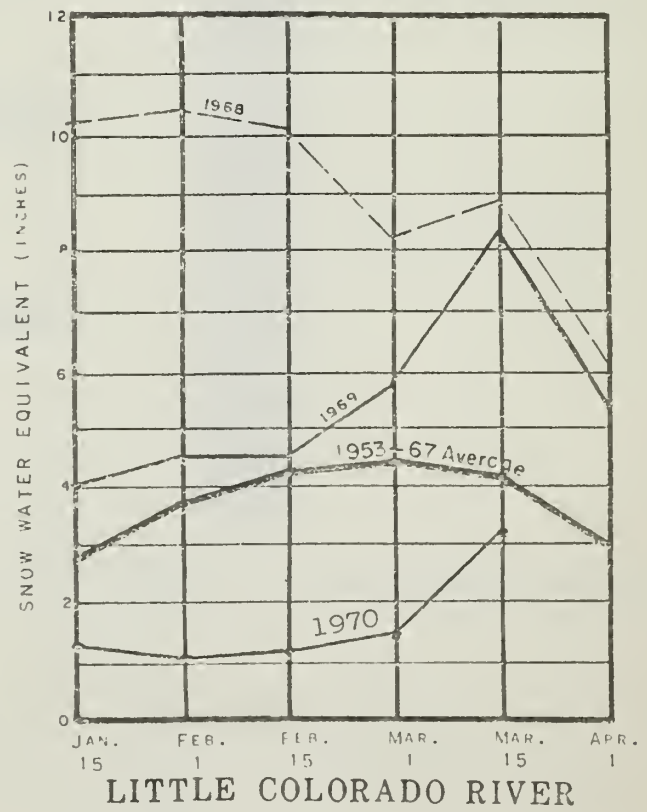
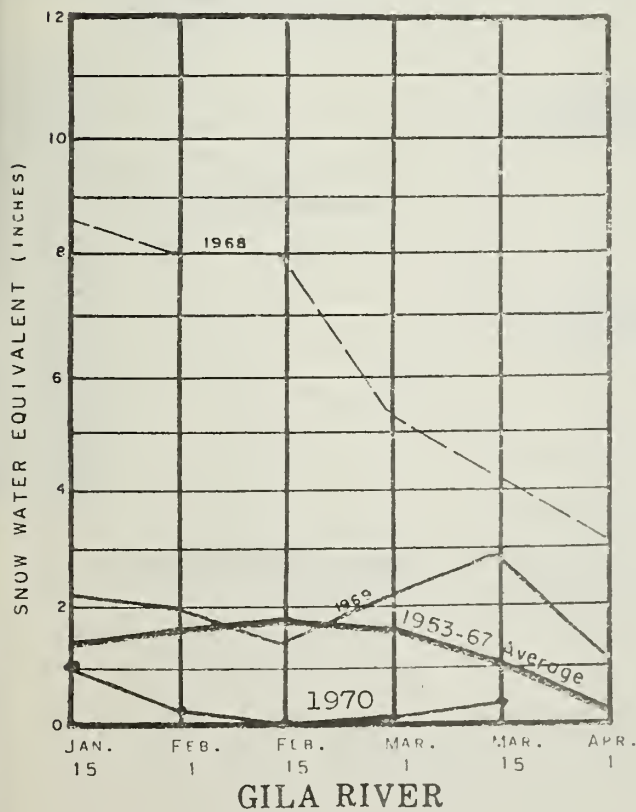
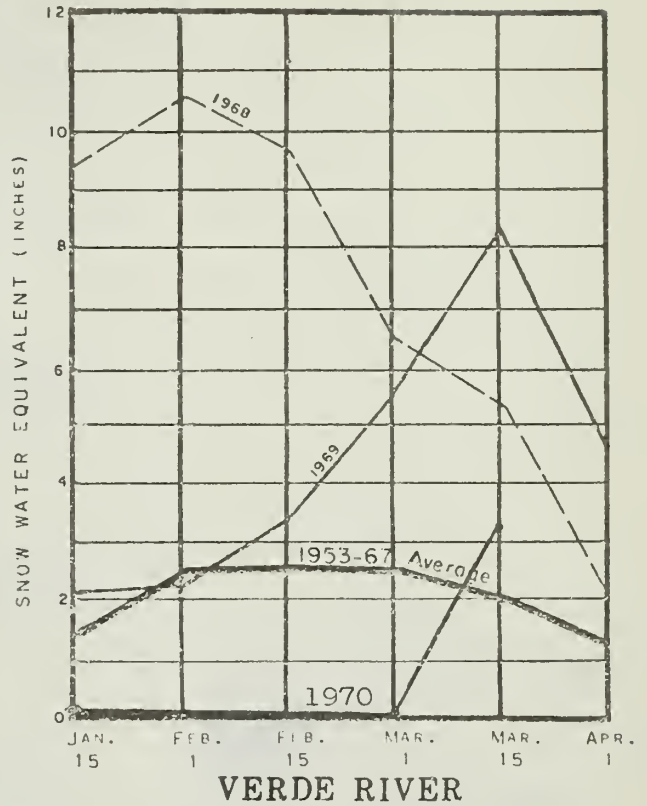
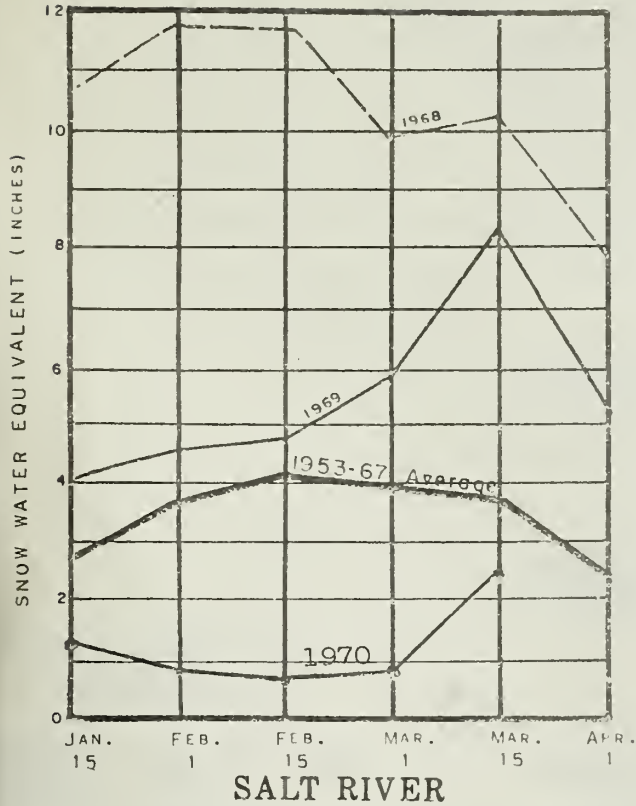
This graph represents the average snow water content on eleven selected snow courses on Arizona Sub-Watersheds.

SUMMARY of SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS)

MARCH 15, 1970

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF:	
		Last Year	Average
Gila	6	10	25
Salt	9	28	67
Verde	7	39	165
Little Colorado	4	39	77
- 5 -			

1970 ARIZONA SNOW COVER BY WATERSHEDS





WATER SUPPLY INVENTORY
SALT RIVER VALLEY SYSTEM

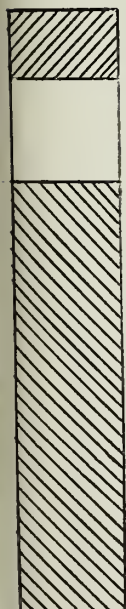
MARCH 15, 1970

3,000,000

2,500,000

2,000,000

AVERAGE SUPPLY ON
MARCH 15



Average Summer
Runoff

Average Spring
Runoff

Average Storage

F
E
E
E
A
C
R
E

1,500,000

1,000,000

500,000

0

ANTICIPATED 1970 SUPPLY*



Average Summer Runoff

Forecast Runoff
(March-May)

Present Storage

* Based on Present Storage + Forecast Spring Runoff + Average Summer Runoff

SNOW

ABOUT MARCH 15, 1970

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average †
<u>GILA RIVER</u>						
Bear Wallow	8100	3/14	16	5.3	4.5	3.7
Beaver Head	8000	3/13	3	0.9	3.7	2.0
Coronado Trail	8000	3/13	T	T	6.7	1.2
Crazy Horse (A)	10200	3/12	60	15.0	---	---
Emory Pass #1 *	7800	3/13	T	T	0.4	---
Emory Pass #2 *	7800	3/13	2	0.6	0.7	---
Frisco Divide	8000	3/13	2	0.8	1.6	1.5
Hannagan Meadows *	9090	3/13	30	9.3	15.3	---
High Peak (A)	10500	3/12	60	15.0	---	---
Hummingbird (A)	10550	3/14	62	16.1	19.8	---
Ice King	8020	3/13	24	6.7	7.4	5.8**
McKnight Cabin *	9300	3/12	11	3.0	2.1	---
Mogollon	7000	3/13	T	0.2	1.5	1.1
Nutriosos	8500	3/13	T	0.0	2.9	1.0
Redstone Trail	8600	3/13	26	6.8	9.7	6.9**
Rose Canyon	7300	3/14	10	3.0	1.9	1.4
Silver Creek Divide	9000	3/13	46	11.4	13.7	10.2**
State Line	8000	3/13	T	0.1	2.8	1.1
Whitewater (A)	10750	3/14	84	21.0	21.3	---
<u>SALT RIVER</u>						
Baldy *	9125	3/13	16	4.7	12.7	6.8
Beaver Head	8000	3/13	3	0.9	3.7	2.0
Canyon Creek	7500	3/13	5	1.3	6.6	2.1**
Canyon Point	7600	3/13	8	2.0	8.1	---
Coronado Trail	8000	3/13	T	T	6.7	1.2
Forest Dale	6430	3/13	0	0.0	2.6	0.2
Ft. Apache	9160	3/13	25	6.2	12.1	7.4
Hannagan Meadows	9090	3/13	30	9.3	15.3	---
Hawley Lake	8300	3/13	16	4.7	10.7	---
Heber	7600	3/13	4	1.1	7.4	2.1
Maverick Fork	9050	3/13	18	5.3	16.4	8.4
McNary	7200	3/13	7	1.8	5.1	1.3
Milk Ranch	7000	3/13	3	1.1	2.9	0.5
Mt. Ord (A)	11000	N O	S U R V E Y		28.5	---
Nutriosos *	8500	3/13	T	0.0	2.9	1.0
Smith Cienega (A)	9850	N O	S U R V E Y		18.0	---
Wilson Lake	9000	3/13	34	9.1	17.9	---
Workman Creek	6900	3/10	3	1.0	10.6	3.4
<u>BILL WILLIAMS RIVER</u>						
Camp Wood *	5700	3/13	0	0.0	1.7	0.3
Copper Basin Divide	6720	3/13	7	2.2	5.6	0.6**
Iron Springs	6200	3/13	1	0.3	2.3	0.2
† Average for 15-year period, 1953-67 (*) Adjacent drainage (**) Ad-justed average (A) Aerial observation Water content estimated						
- 8 -						

ABOUT MARCH 15, 1970

SNOW

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average †
<u>VERDE RIVER</u>						
Baker Butte	7300	3/13	10	2.9	11.8	---
Camp Wood	5700	3/13	0	0.0	1.7	0.3
Chalender	7100	3/13	11	3.3	6.0	1.6
Copper Basin Divide	6720	3/13	7	2.2	5.6	0.6**
Fort Valley	7350	3/13	9	3.1	8.3	1.1
Gaddes Canyon	7600	3/13	13	3.8	11.2	3.7**
Happy Jack	7630	3/13	10	3.0	9.6	1.5
Iron Springs *	6200	3/13	1	0.3	2.3	0.2
Mingus Mountain	7100	3/13	2	0.5	5.1	0.3
Mormon Lake *	7350	3/13	12	3.7	8.4	2.3
Mormon Mountain	7500	3/13	18	5.6	13.2	3.4
Newman Park	6750	3/13	4	1.5	7.8	1.1**
Snow Bowl #1	10260	3/16	35	8.6	19.6	8.9**
Snow Bowl #2	11000	3/16	66	16.5	30.3	---
White Horse Lake Jct.	7150	3/13	12	4.0	7.4	---
White Spar	6000	3/13	1	0.2	1.9	0.2**
<u>LOWER COLORADO RIVER</u>						
Bill Williams Int.	8550	3/13	29	7.4	19.0	---
Bill Williams Summit	8950	3/13	38	9.7	21.7	---
Bright Angel	8400	3/13	35	10.1	---	---
Chalender *	7100	3/13	11	3.3	6.0	1.6
Fort Valley	7350	3/13	9	3.1	8.3	1.1
Grand Canyon	7500	N O	S U R V E Y		4.5	0.9
Williams Ski Run	7720	3/13	22	5.5	13.0	---
<u>LITTLE COLORADO RIVER</u>						
Agassiz	11200	N O	S U R V E Y		---	---
Baldy	9125	3/13	16	4.7	12.7	6.8
Canyon Creek	7500	3/13	5	1.3	6.6	2.1**
Canyon Point	7600	3/13	8	2.0	8.1	---
Cheese Springs	8600	3/13	21	6.4	11.5	---
Forest Dale	6430	3/13	0	0.0	2.6	0.2
Ft. Apache	9160	3/13	25	6.2	12.1	7.4
Fort Valley	7350	3/13	9	3.1	8.3	1.1
Happy Jack *	7630	3/13	10	3.0	9.6	1.5
Heber	7600	3/13	4	1.1	7.4	2.1
Inner Basin #1	10100	N O	S U R V E Y		---	---
Inner Basin #2	9750		"		---	---
Inner Basin #3	10250		"		---	---
McNary	7200	3/13	7	1.8	5.1	1.3
Mormon Lake	7350	3/13	12	3.7	8.4	2.3
Mormon Mountain	7500	3/13	18	5.6	13.2	3.4
Nutriosio	8500	3/13	T	0.0	2.9	1.0
Snow Bowl #1	10260	3/16	35	8.6	19.6	8.9**
Snow Bowl #2	11000	3/16	66	16.5	30.3	---
Wilson Lake *	9000	3/13	34	9.1	17.9	---

- 9 -

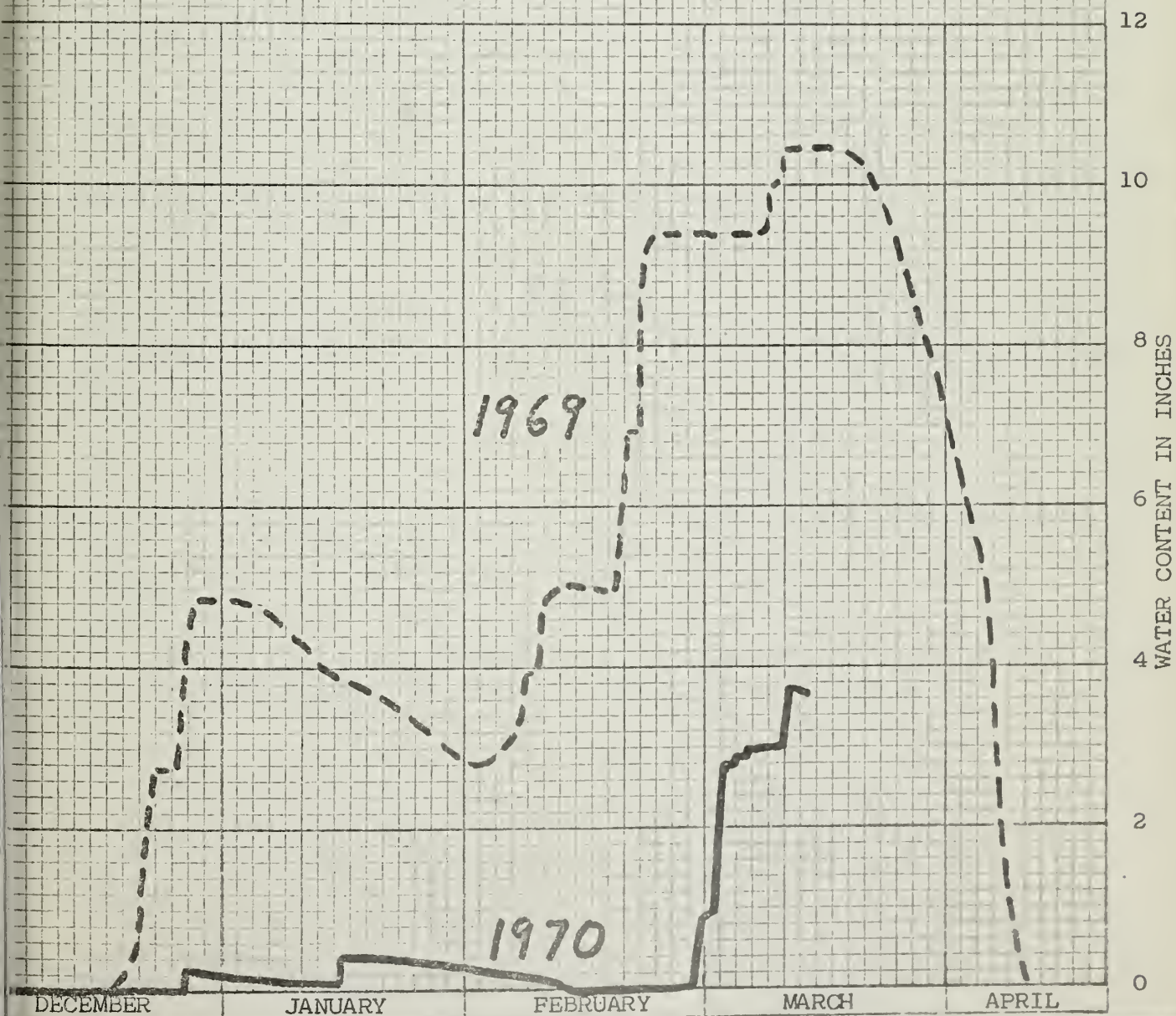
† Average for 15-year period, 1953-67 (*) Adjacent drainage (**) Adjusted average (A) Aerial observation: Water content estimated

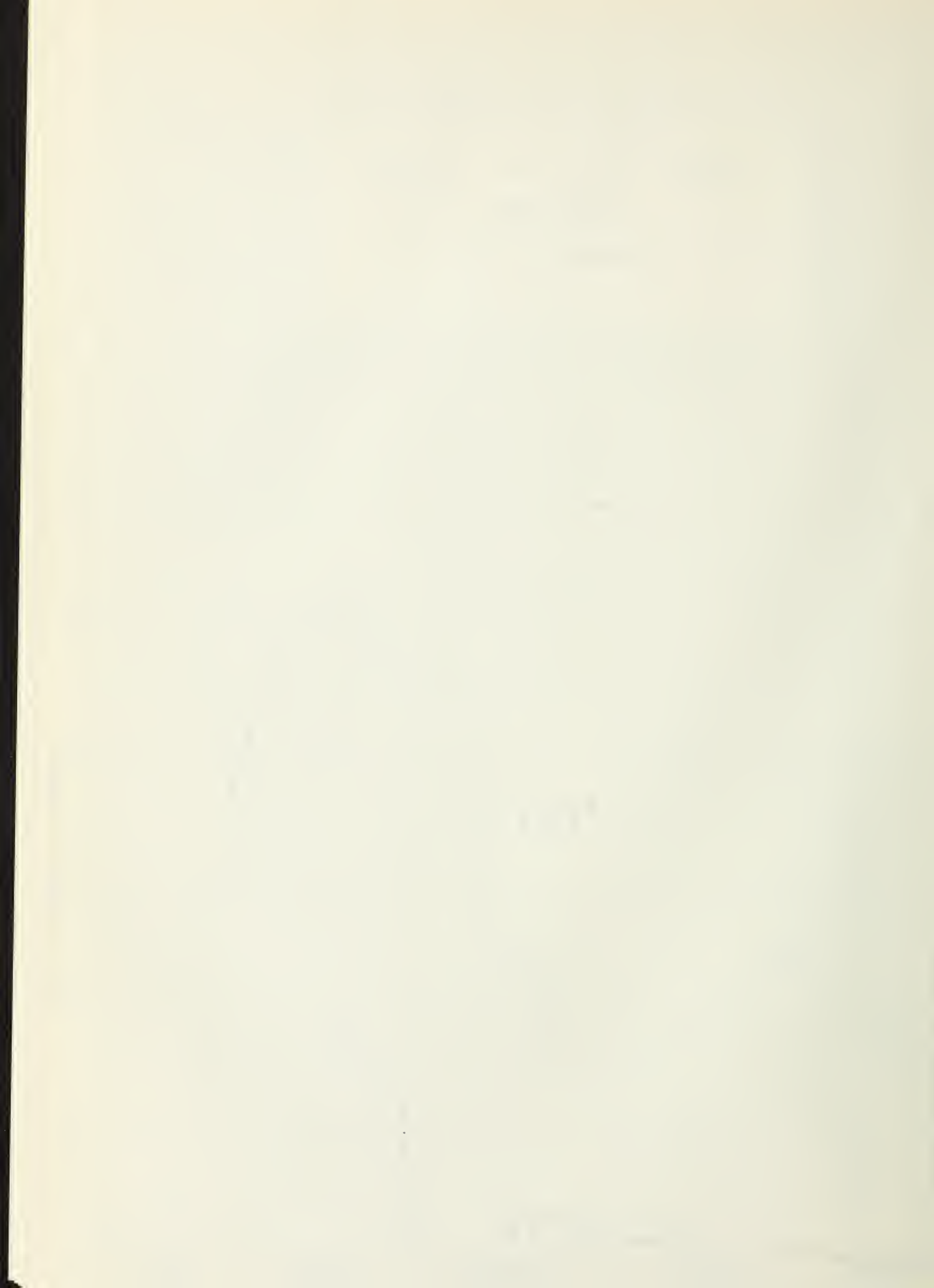


S N O W P I L L O W D A T A

BAKER BUTTE

Elevation: 7300

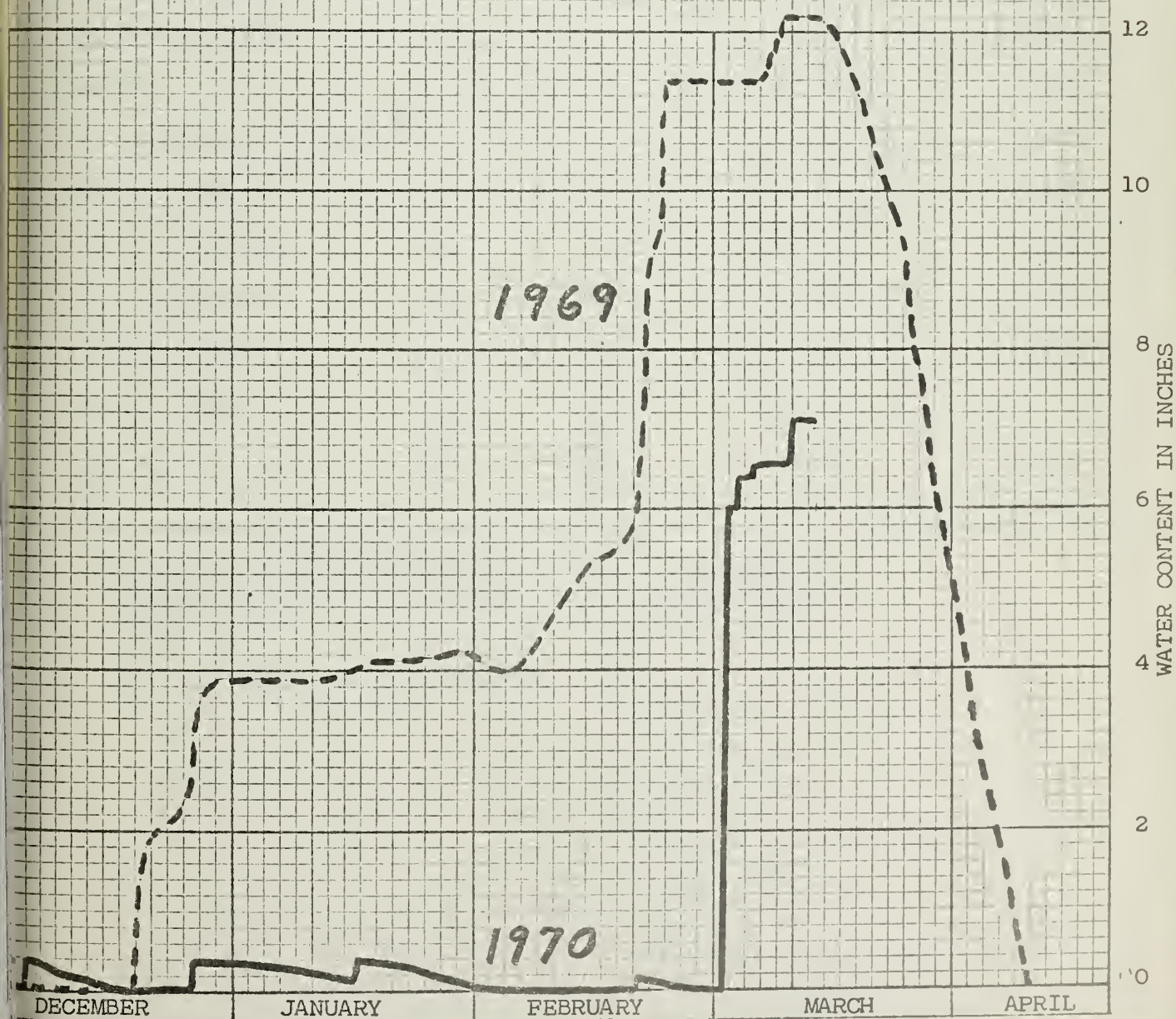




SNOW PILLow DATA

MORMON MOUNTAIN

Elevation: 7500





PRECIPITATION AT SELECTED ARIZONA STATIONS 1/

STATION	Precipitation (Inches)			
	February - 1970		Current Water Year (Oct. 1969 - February 1970)	
	Total	Departure from Normal	Total	Departure from Normal
Alpine	.71	- .67	4.85	- 1.93
Ash Fork	.24	- .91	3.21	- 1.56
Clifton	.90	- .01	5.01	+ .73
Douglas Smelter	.24	- .35	1.21	- 1.87
Flagstaff WBO**	.41	- 1.37	4.56	- 3.22
McNary	.43	- 1.71	5.44	- 4.80
Payson Ranger Station	.37	- 1.82	5.56	- 3.50
Phoenix WBO *	.30	- .55	1.71	- 1.67
Prescott (City)	.24	- 1.70	3.57	- 4.42
Springerville	.08	- .45	1.57	- 1.40
Tucson WBO *	.34	- .50	2.25	- 1.59
Winslow WBO *	.07	- .41	1.50	- .95
Yuma WBO *	.56	+ .20	2.90	+ 1.33

1/ Data and Analysis furnished by Paul C. Kangieser,
Arizona State Climatologist, U. S. Weather Bureau,
ESSA, Tempe

* WBO = Weather Bureau Office



PRECIPITATION (Inches) ABOUT MARCH 15, 1970

DRAINAGE BASIN and PRECIPITATION GAGE LOCATION	ELEVATION	CURRENT INFORMATION			FROM APPROX. NOV. 1 TO DATE		
		Date of Reading	Month's Precipitation	Average †	This Year	Average †	Percent of Average
<u>GILA RIVER</u>							
Silver Creek Divide	9000	3/13	4.30	---	12.70	---	---
Hannagan Meadows	9030	Delayed		1.57*	---	11.67*	---
<u>SALT RIVER</u>							
Canyon Point	7600	3/13	4.54	---	11.67	---	---
Hannagan Meadows	9030	Delayed		1.57*	---	11.67*	---
Little Wildcat (Heber Snow Course)	7600	3/13	3.69	1.57*	10.14	12.94*	78
Maverick Fork	9050	3/13	3.25	1.29*	9.10	11.22*	81
Workman Creek **	6970	3/10	3.30	1.69	12.43	15.57	80
Wilson Lake	9100	3/13	3.00	---	8.23	---	---
<u>VERDE RIVER</u>							
Baker Butte	7300	3/13	6.00	---	12.32	---	---
Copper Basin Divide	6720	3/13	6.34	---	10.12	---	---
Fort Valley **	7350	3/13	4.13	.92	7.30	8.18	89
Happy Jack **	7480	3/13	3.56	1.21*	8.43	10.08*	84
Mingus Mountain	7660	3/13	5.11	1.02	8.95	8.77	102
Mormon Mountain	7500	3/13	7.13	---	12.16	---	---
<u>LITTLE COLORADO</u>							
Inner Basin #1	9830	2/27	---	---	5.92	---	---
Inner Basin #2	10050	2/27	---	---	8.41	---	---
Sheep Crossing (Baldy Snow Course)	9125	3/13	2.63	1.17*	7.60	10.59*	72
Little Wildcat (Heber Snow Course)	7600	3/13	3.69	1.57*	10.14	12.94*	78
* 1953-67 Adjusted Average							
** Data Supplied by U.S. Forest Ser- vice							
† Average is for 15- year period, 1953- 1967							
- 13 -							



SOIL MOISTURE ABOUT MARCH 15, 1970

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average †
<u>GILA RIVER</u>							
Frisco Divide	8000	48	13.3	3/13	10.4	10.6	11.3
<u>SALT RIVER</u>							
Black River Divide	9100	48	16.8	3/13	18.0	14.6	16.1
Canyon Creek	7500	48	18.3	3/13	18.2	17.7	15.2
Corduoy Creek	6000	48	16.0	3/13	14.0	14.2	9.0
McNary	7200	48	16.3	3/13	14.9	17.9	14.9
<u>VERDE RIVER</u>							
Mormon Mountain	7500	48	16.1	3/13	17.7	17.8	15.7
Newman Park	6750	48	17.7	3/13	18.8	19.2	16.7

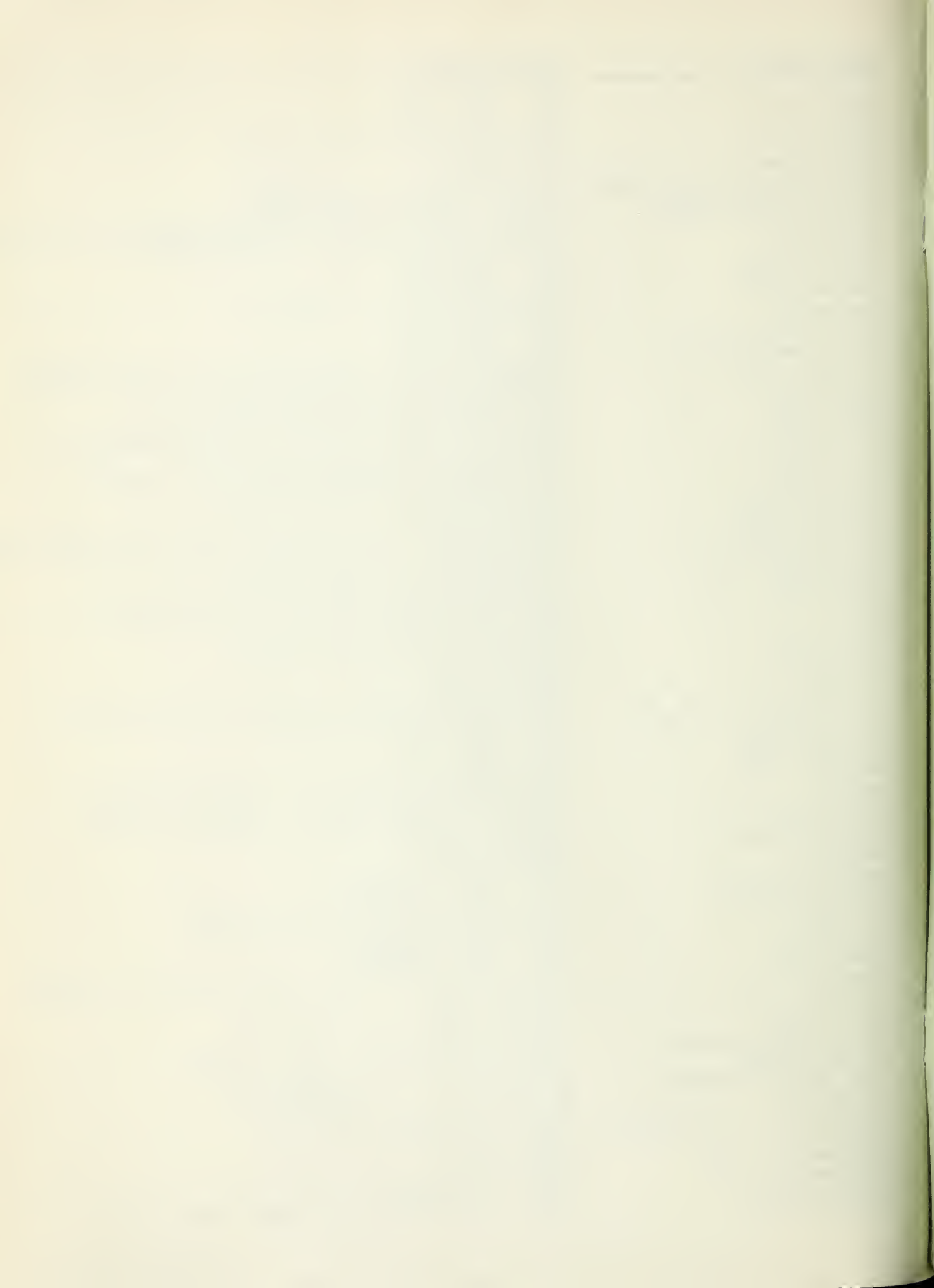


SNOW COURSE

Baker Butte
Baldy
Bear Wallow
Beaver Head
Bill Williams Intermediate
Bill Williams Summit
Bright Angel
Camp Wood
Canyon Creek
Canyon Point
Chalender
Cheese Springs
Copper Basin Divide
Coronado Trail
Crazy Horse
Emory Pass
Forest Dale
Ft. Apache
Fort Valley
Frisco Divide
Gaddes Canyon
Grand Canyon
Hannagan Meadows
Happy Jack
Hawley Lake
Heber
High Peak
Hummingbird
Ice King
Inner Basin #1, #2, #3
Iron Springs
Maverick Fork
McKnight Cabin
McNary
Milk Ranch
Mingus Mountain
Mogollon
Mormon Lake
Mormon Mountain
Mt. Ord
Munds Park
Newman Park
Nutrioso
Redstone Trail
Rose Canyon
Silver Creek Divide
Smith Cienega
Snow Bowl #1 and #2
State Line
White Horse Lake Junction
White Spar
Whitewater
Williams Ski Run
Wilson Lake
Workman Creek

SNOW SURVEYOR

SCS - Dick Enz
SCS - Bill Cole
Forest Service - Carl Sollers
N. A. Josh
Forest Service - John Sotelo
Forest Service - John Sotelo
National Park Service - Kenneth Hulick, Dist. Rgr.
Forest Service - Walter G. Richardson
SCS - Dick Enz
SCS - Dick Enz
Forest Service - M. Freshour
SCS - Bill Cole
SCS - Bill Gray
Forest Service - John W. Holt and John O. Maeder
Forest Service - Loyd Barnett
SCS - Jim Powell and Travis Stevenson
Bureau of Indian Affairs - Raymond Endfield
SCS - Bill Cole
Rocky Mountain Forest & Range Exp. Station
Forest Service - J. M. Sanchez
Paul G. Lidbeck
National Park Service - Robert E. Scott, Dist. Rgr.
N. A. Josh
Forest Service - Don W. Witt
Bureau of Indian Affairs - Raymond Endfield
SCS - Dick Enz
Forest Service - Loyd Barnett
Ray Freeman
James R. Wray
SCS and USBR - Jack Jorgensen and Jay Roberts
SCS - Bill Gray
SCS - Bill Cole
Ray Freeman
Bureau of Indian Affairs - Raymond Endfield
Bureau of Indian Affairs - Raymond Endfield
Paul G. Lidbeck
James R. Wray
SCS - Jack Jorgensen
SCS - Jack Jorgensen
Salt River Project - Bill Warskow
SCS - Jack Jorgensen
SCS - Jack Jorgensen
Forest Service - John W. Holt and John O. Maeder
James R. Wray
Forest Service - Carl Sollers
James R. Wray
Salt River Project - Bill Warskow
Forest Service - Ky Porter
Forest Service - J. M. Sanchez
Forest Service - John Sotelo
SCS - Bill Gray
Ray Freeman
Forest Service - John Sotelo
SCS - Bill Cole
Rocky Mountain Forest & Range Exp. Station



The Following Organizations Cooperate in the Arizona Snow Survey Work

FEDERAL

Department of Agriculture

Soil Conservation Service

Forest Service

Apoche Forest

Coconino Forest

Coronado Forest

Gila Forest

Koibob Forest

Prescott Forest

Rocky Mountain Forest and Range Experiment Station

Tonto Forest

Department of Commerce

Weather Bureau

Arizona Section

Department of Interior

Bureau of Reclamation

Region III

Geological Survey

Arizona District

Bureau of Indian Affairs

Fort Apoche Reservation

San Carlos Irrigation Project

National Park Service

Grand Canyon National Park

Gila Water Commissioner

Safford, Arizona

STATE

University of Arizona

Arizona Agricultural Experiment Station

Water Resource Research Center

IRRIGATION PROJECTS

Salt River Valley Water Users' Association

Phoenix, Arizona

San Carlos Irrigation and Drainage District

Coolidge, Arizona

PRIVATE

Southwest Forest Industries, Inc.

McNary, Arizona

Other organizations and individuals furnish valuable information for the snow survey reports. Their cooperation is gratefully acknowledged.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ROOM 6029 FEDERAL BUILDING
PHOENIX, ARIZONA 85025

OFFICIAL BUSINESS



POSTAGE AND FEES PAID
U. S. DEPARTMENT OF AGRICULTURE

FIRST CLASS MAIL

FEDERAL - STATE - PRIVATE
COOPERATIVE SNOW SURVEYS

Furnishes the basic data
necessary for forecasting
water supply for irrigation,
domestic and municipal water
supply, hydro-electric power
generation, navigation,
mining and industry

*"The Conservation of Water begins
with the Snow Survey"*